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Using State Assessments to Increase Equity in G/T Identification

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Summary Points

- Approximately 30% of the highest achieving 3rd graders in Arkansas are not identified as G/T by 4th grade.
- The process for G/T identification varies by district.
- High achieving students who participate in the FRL program are 11 percentage points less likely to be identified as G/T.
- Districts enrolling higher percentages of FRL students are more likely to identify high achievers as G/T.
- G/T identification rates of high achieving students do not differ substantially based on the student race or ethnicity after controlling for district characteristics.
- Using the state assessment as a universal screener for further G/T testing could increase equity in G/T identification.

This Brief

In this brief, we explore the rate of identification of students as Gifted and Talented (G/T). In particular we examine the rate of identification for the highest achieving 3rd graders who scored in the top 5% statewide on state assessments in both Reading and Mathematics from 2015 to 2018 and the likelihood that they are identified G/T by 4th grade. Across five cohorts of 3rd to 4th grade students, we find that 30% of the highest achieving students are not identified as G/T. We find statistically significant differences in the likelihood that high achieving students from economically disadvantaged backgrounds are provided G/T services. We also find that high achieving students in low poverty schools are less likely to be identified for G/T services.

Introduction

In Arkansas, G/T education in public schools was mandated by the AR General Assembly when they passed Act 106 of 1979. The Standards for Accreditation of Arkansas Public Schools adopted by the State Board of Education on February 22, 1984, included a provision that all districts must provide a program for gifted and talented students. In 1983, the School Finance Act provided funding to develop and operate G/T programs. Act 917 of 1995 changed the funding process to local school districts. The most recent standard for G/T education and identification "Gifted and Talented Program Approval Standards" was adopted in 2009. Each school district must use these described standards to screen gifted and talented students and provide them with an approved gifted program.

AR's G/T identification process follows the tradition that looks at giftedness and talents as multifaceted and should be accommodated with appropriate educational services (Renzulli, 1978).

The identification process has several stages and can occur at any grade level from Kindergarten to 12th grade. Typically, the students must be nominated for consideration as G/T. This nomination can come from various sources, including teachers, parents, counselors, and students. Next, data must be collected on the nominated students using, per state requirement, at least two objective and two subjective measures with at least one of those being a creativity assessment. A committee consisting of at least five professional educators chaired by a trained specialist in gifted education will decide whether to place the student in appropriate programs based on the collected information. This committee can be per campus within the districts and/or at the district level with representatives from each campus (Robinson et al., 2014).

There is, however, no consistently applied standard to identify a student as G/T. Districts can determine their process, and identification may not remain with the student if they transfer districts. District's gifted program must have an annual evaluation through a state program approval report. (Robinson et al., 2014, p. 351).

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Table 1: Summary Statistics for Five Cohorts of Matched 4th Grade Demographics and 3rd Grade State Reading and Mathematics Assessment Achievement

	N	% FRL	% SPED	% ELL	% Female	% White	% Black	% Hispanic	% Other Race	% Gifted
Full Sample (4th grade)	173,133	65	12	9	49	61	20	13	5	12
Top 5% (3rd grade)	4,330	30	2	2	58	80	4	7	10	70

In terms of servicing students that are identified, districts must meet the minimum requirements of services. From Kindergarten through 2nd grade, districts generally provide weekly whole-group enrichment classes. Between 3rd and 12th grade, once students are identified as in need of the gifted and talented program, they are required to receive a minimum of 150 minutes a week of services. Those services vary widely across the state, but especially in the secondary setting from G/T seminar and Honors courses to AP/Pre-AP/Concurrent classes.

However, there is no consistency or uniform way in which districts meet the needs of G/T students as local decisions lead to the implementation of services in a wide variety of ways. Regarding the program's G/T teachers, they have to pass the Gifted Education Praxis Examination and meet licensing standards for an add-on endorsement/licensure in gifted education (Robinson et al., 2014, p. 351).

Our study focuses explicitly on the identification process of gifted and talented students in AR. This descriptive analysis examines whether academically gifted students in AR are being overlooked in the G/T identification process and, as a result, are not being provided the opportunity to participate in G/T or other programming that is tailored to their needs (Assouline et al., 2015; Lubinski & Benbow, 2000; Subotnik et al., 2011; Wai et al., 2010).

G/T Identification Overall

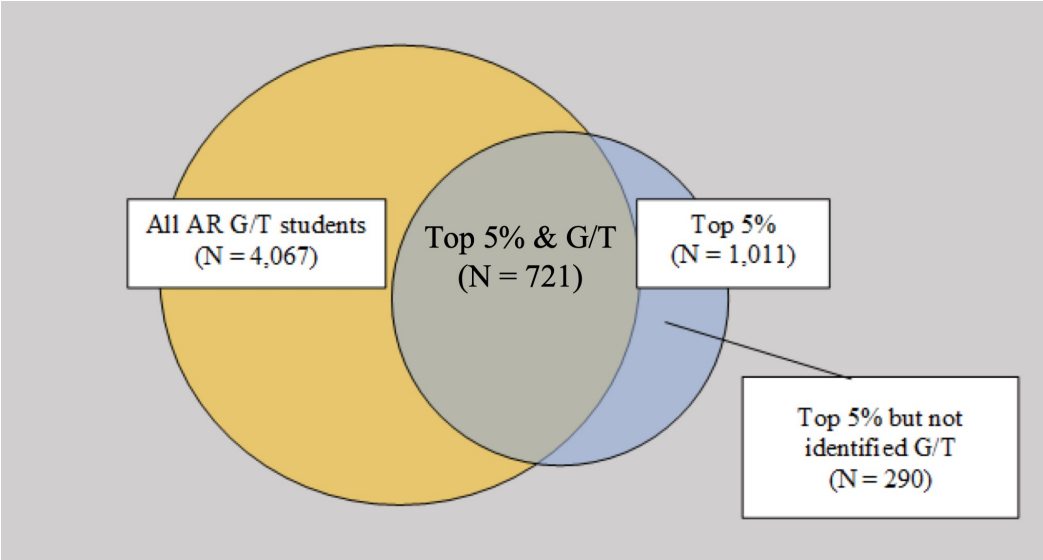
In this study, we examine the alignment between 4th grade students that identified as G/T and those students who performed in the top 5% of the state in both Reading and Mathematics on their 3rd grade assessments. Students complete the first statewide assessment of Reading and Mathematics in the spring of their 3rd grade year. We assume that those students who score in the top 5% of state standardized tests are high achievers and can be considered academically gifted and talented (e.g., Acceleration Institute, 2020; Lakin & Wai, 2020; Wai et al., 2012).

For this reason, we proceed to use students' 3rd grade reading and math achievement in the years 2013, 2014, 2016, 2017, and 2018 and their 4th grade gifted indicator in the years 2014, 2015, 2017, 2018, and 2019. Note that our analysis does not include the cohort of 4th graders from 2016, as the G/T indicator was not included in the state data provided for that year.

Our data are anonymized student-level assessment and demographic data from the AR Department of Education. Publicly available district-level characteristics were then matched with student-level data. We included five years of data, totaling 173,133 students.

Table 1 reports summary statistics of the five cohorts. Across our sample, 65% students are Free/Reduced Lunch eligible, 12% have Special Education status, 9% are English Language Learners, 49% are female, 61% are White, 20% are Black, 13% are Hispanic, and 12% are gifted and talented. The top achieving group, however, is not representative of the sample's demographics. In the group of top 5% of 3rd grade achievers, White and female students were overrepresented relative to their share of the 4th grade population. In contrast, Black and Hispanic students, as well as those participating in FRL, identified as SPED, or identified as ELL were less likely to be in the high achieving group. Among the top 5% achieving students, 70% were identified as G/T by 4th grade, whereas 30% were not.

Figure 1: Venn Diagram for 2019 4th Grade G/T Students and 2018 Top 5% Students on 3rd Grade State Reading and Mathematics Assessments



Perhaps G/T programs do not have adequate resources to serve all the highest achievers. Figure 1 shows that this is not the case by illustrating the relationship between high achievers and G/T identification for the 2019 cohort. The yellow circle represents all students identified as G/T in 4th grade in 2019, and the blue circle indicates the 4th grade students that scored in the top 5% on both Reading and Mathematics state assessments in 3rd grade. Similar to data presented in Table 1 for the full sample, 71% of top 5% students are identified G/T, whereas 82% of students identified G/T were not in the top 5% of achievers in 3rd grade.

Variation of by Student Demographics

Given that only 70% of the highest achieving students are identified G/T, we examine the identification rates of students in the top 5% by student demographic characteristics.

Table 2 shows that there are differences by student demographic characteristics in the likelihood that a that a student scores in the top 5% on the 3rd grade statewide Reading and Mathematics assessment. For example, overall 2.5% of the sample cohorts scored in the top 5% in both Reading and Mathematics, but only 1% of students participating in the FRL program were very high achieving. Black students and students receiving special education and/or ELL services were the least likely to score in the top 5% in both content areas on the 3rd grade state assessment.

When we limit our analysis to those students who did score in the top 5%, we find an average G/T identification rate of 70%. However, rates vary by student characteristics, ranging from a high of 76% of high achieving Black students being identified G/T to a low of 60% of students receiving special education services that demonstrated similarly high achievement.

Table 2: Top 5% and G/T Identification Rates by Student Demographic Characteristics, Full Sample

	Total Sample	FRL	SPED	ELL	Female	White	Black	His-panic	Other Race
% of sample population in Top 5% on 3rd grade state assessment	2.5	1.1	0.3	0.5	2.9	3.3	0.5	1.3	4.4
% of Top 5% in 3rd grade identified as G/T by 4th grade	70	64	60	71	70	70	76	67	70

The variation in the G/T identification rates of the top 5% of student achievers raises concerns about the equity of the G/T identification process.

To account for the inter-correlation of student demographic characteristics, we ran a multivariate model to predict the likelihood that top 5% students with particular characteristics are identified as G/T by 4th grade. We found that among high achieving students, students participating in the FRL program were 9 percentage points less likely to be identified G/T than their similarly high achieving non-FRL peers. In addition, we found that high achieving Black students were 9 percentage points more likely to be identified as G/T than their White peers. There were no statistically significant difference for SPED, ELL or female students, or between Hispanic or Other race students and their White peers.

As G/T identification occurs at the district level, we included district-characteristics such as geographic region, poverty level (%FRL), size (enrollment), and urbanicity into the multivariate model along with the student characteristics examined previously. Interestingly, the likelihood of students participating in the FRL program being identified G/T decreased once district characteristics were added to the model. High achieving FRL students were now 11 percentage points less likely to be identified G/T than their similarly high achieving non-FRL peers. Once districts characteristics were included in the model, however, there was no significant difference in Black students' likelihood to be identified as G/T compared to top 5% achievers from other races.

The multivariate results indicate variation by the poverty level of the district in which a students attends. High achieving students attending high poverty districts (over 66% FRL) were 9 percentage points more likely to be identified G/T than similar students in districts with between 52 and 65% of students participating in the FRL program. High achieving students attending districts with less than 52% FRL were 8 or 9 percentage points less likely to be identified as G/T.

District size was inconsistently related to G/T identification rates of high achieving students. Students in the largest districts (enrollment over 6,000) and those just slightly smaller (2,601 to 6,000 students) were 20 and 11 percentage points more likely to be identified G/T than similar students in medium sized districts enrolling between 1,000 and 2,600 students. However, high achievers in small districts (500 to 1000 students) were also more likely than their high achieving peers in medium districts were, so there was not a clear relationship between district size and the likelihood of G/T identification of top 5% students. High achieving students attending districts in the Southeast and Central regions were more likely to be identified G/T than students in the Northwest region by 15 and 5 percentage points respectively. The only difference by district urbanicity was that high achieving students in towns were 10 percentage points more likely to be identified as G/T than their peers in districts located in cities.

Conclusion

We used the G/T identification rates of students in the top 5% of achievement on the 3rd grade state assessment in Reading and Mathematics as a way to identify students who are demonstrating high academic performance.

Overall, the findings reveal that 30% of 4th grade students who scored in the top 5% on both Reading and Mathematics assessments in 3rd grade are not identified as G/T, and so are not receiving services matched to their learning rate intended to support the further academic development of such high achieving students. Conversely, many G/T identified students were not in the top 5% of the achievement distribution.

To be clear, we are not arguing that all of these students identified G/T are not gifted. To some extent, G/T is a somewhat arbitrary designation on various continuums that depend on definitions of various abilities or talents and corresponding cut scores (e.g., McBee & Makel, 2019; Wai & Lakin, 2020). G/T students who are not in the top 5% may have creative giftedness and talents required by AR state's guideline on G/T identification.

What is at stake here is that 30% of the students in the right tail of 95th percentile cross all the years we studied are not given G/T services. Had the identification system included this achievement, perhaps we would not have missed a large potion of students who are ready to be developmentally placed at a higher level of curriculum to help develop their talents to the fullest. AR indeed has the resources to accommodate all top 5% students because the total number of all top 5% students is much smaller then the number of all G/T students across the state. At present, then, having such high scoring students get G/T services available in their district would seem appropriate.

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Of particular concern is the likelihood that a high achieving student from an economically disadvantaged background will be identified as G/T. Multivariate models indicate that high achieving students participating in the Federal Free/Reduced Lunch program were 11 percentage points less likely to be identified as G/T. This may be due to a lack of teacher, parent, or counselors' likelihood of referring these students for G/T assessments, or other factors. Using student achievement on the 3rd grade state assessment in Reading and Mathematics as a 'universal screening' tool could help these students receive the academic services they need to develop more optimally.

On a positive note, we found no statistically significant differences in the likelihood of G/T identification of high achieving students by race, gender, or special program status (SPED, ELL). In other words, Free and Reduced Lunch was the only subgroup that we detected a potential bias in the G/T identification process in AR. In addition, although some student groups are less likely to be in the top 5% of achievers, all student groups are represented in the G/T population. We find no consistent pattern between the likelihood of G/T identification of high achieving students and district characteristics, perhaps reflecting the inconsistency in identification processes. Using universal screening in AR, or moving more towards that goal, could potentially increase alignment between district identification, identify more high achieving students from economically disadvantaged backgrounds as G/T, and help address the missing of 30% academically achieving students in the G/T category.

Current G/T identification system misses a noticeable proportion of objectively gifted math and verbal achievers scoring in the top 5% of the state achievement distribution. That this group of academically talented students is not being identified for G/T services may represent a potential loss both to the students, the state, and beyond. We suggest districts consider revising G/T identification procedures, perhaps using the state assessment as a universal screener as a first step. If our goal is to create a system that includes more students deserving to be identified and provided with G/T services, our study provides some strategies and policy recommendations that can help.

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